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CREME96: a revision of the Cosmic Ray on Micro-Electronics code,

Tylka, A.J. Adams, J.H., Jr. Boberg, P.R. Brownstein, B. Dietrich, W.F. Flueckiger, E.O. Petersen, E.L. Shea, M.A. Smart, D.F. Smith, E.C.

E.O. Hulburt Center for Space Res., Naval Res. Lab., Washington, DC, USA;

This paper appears in: Nuclear Science, IEEE Transactions on

Meeting Date: 07/21/1997 - 07/25/1997

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Abstract:

CREME96 is an update of the Cosmic Ray on Micro-Electronics code, a widely-used suite of programs for creating numerical models of the ionizing-radiation environment in near-Earth orbits and for evaluating radiation effects in spacecraft. **CREME96**, which is now available over the World-Wide Web (WWW) at <http://crsp3.nrl.navy.mil/creme96/>, has many significant features, including: (1) improved models of the galactic cosmic ray, anomalous cosmic ray, and solar energetic particle ("flare") components of the near-Earth environment; (2) improved geomagnetic transmission calculations; (3) improved nuclear transport routines; (4) improved single-event upset (SEU) calculation techniques, for both proton-induced and direct-ionization-induced SEUs; and (5) an easy-to-use graphical interface, with extensive on-line tutorial information. In this paper we document some of these improvements

Index Terms:

cosmic ray interactions integrated circuit modelling space vehicle electronics **CREME96** Cosmic Ray Effects on Micro-Electronics code anomalous cosmic rays direct-ionization-induced SEU flares galactic cosmic rays geomagnetic transmission graphical interface ionizing radiation effect near-Earth orbit nuclear transport numerical model proton-induced SEU single-event

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